Amendments in the claims:

Please amend claim 1 and add new claims 22-39, as indicated below. Added text is underlined and deleted text is either struck through or shown in double enclosing brackets. The Applicant is aware that no new matter has been added.

1. (currently amended) An optical switch within an asynchronous fiber optic communication network comprising,

a plurality of fiber optic inputs,

a plurality of fiber optic outputs having different wavelengths for wavelength division multiplexing,

and a buffer unit communicating with the inputs and outputs, wherein the buffer unit has electronic variable delays, adjustable from below to above the duration of a packet, that buffer data based upon reorganizing the data by assigning data packets according to ranges of length to different delay queues and scheduling outputting of data non-periodically and at a non-predetermined ~~the~~ moment when a predefined number, greater than one, of wavelengths, directed to a buffered destination, are vacant,

whereby data packets having shorter lengths have greater probability of encountering sufficient vacant outputs of different wavelength and data packets having longer lengths having lesser probability of encountering sufficient vacant outputs of different wavelength.

2. (previously presented) The switch of claim 1 wherein the switch monitors to detect a number of vacant wavelengths at the switch outputs being greater than or equal to the predefined number.

3. (original) The switch of claim 1, wherein the data and buffered packets are classified according to one of (a) packet data length and (b) length of non-packet data.

4. (previously presented) The switch of claim 3, wherein at least one data packet with a length within a first range is associated with a first queue, a further data packet with a length within a second range is associated with a second queue, and a still further data packet with a length within a third range is associated with a third queue.

5. (previously presented) The switch of claim 1 wherein the buffer unit has inputs with data originating from lines external to the switch.

6. (previously presented) The switch of claim 5, wherein the lines external to the switch are aggregation inputs.

7. (previously presented) The switch of claim 1, wherein the buffer unit has an input and the data, at the buffer unit input is routed from a one or more switch inputs.

8. (original) The switch of claim 1, where the switch is selected to operate within one of the following networks among the group consisting of electronic buffers allow a variable delay of packets, an optical bursts switched network, an electronic packet switched network, a WDM network, and an electronic bursts switched network.

9. (original) The switch of claim 5, where the switch is an optical switching unit.

10. (original) The switch according to claim 5, where the switch is an electronic switching unit.

11. (original) The switch of claim 7, where at least one of the output or input signals of the switch are WDM.

12. (original) The switch of claim 9, where the buffer is an electronic type of buffer.

13. (currently amended) A method for organizing dataflows in an asynchronous communication network including at least one switch, where said switch is associated with at least one buffer having fiber optic inputs and outputs with a plurality of data queues and at least a dataflow that can be divided into data packets, comprising:

switching data packets arriving at the switch inputs directly to the switch outputs when a predefined number, being at least one, of wavelengths being monitored, is vacant,

communicating data packets arriving at the switch inputs directly to the buffer unit, if none wavelengths are vacant, and reorganizing the data by assigning data packets according to ranges of length to different buffer queues,

scheduling outbound data packets from the buffer unit to the switch input non-periodically and at a non-predetermined the moment when a predefined number, being at least two, of wavelengths leading to a switch output destination being monitored to be vacant,

whereby data packets having shorter lengths have greater probability of encountering sufficient vacant outputs of different wavelengths and data packets having longer lengths having lesser probability of encountering sufficient vacant outputs of different wavelengths.

14. (previously presented) The method of claim 13 further defined by monitoring to schedule data from the buffer unit to an output of the switch upon a number of vacant wavelengths at the output of the switch being at least the predefined number.

15. (original) The method of claim 13 further defined by buffering data packets into a number of queues according to parameters of the data packets.

16. (original) The method of claim 13, wherein the method further comprises associating data packets with a length within a first range with a first queue.

17. (original) The method of claim 13, wherein the method further comprises associating data packets with a length within a second range with a second queue.

18. (original) The method of claim 13, wherein the method further comprises associating data packets with a length within a third range with a third queue.

19. (cancelled)

20. (previously presented) The method of claim 13, wherein the predefined number of vacant wavelengths is specific to each queue.

21. (cancelled)

22. (new) An optical switch for use in an asynchronous, wavelength-division-multiplexing, fiber-optic communication network, wherein the optical switch comprises:

at least one fiber-optic input;

at least one fiber-optic output; and

a buffer unit comprising a plurality of queues,

wherein the optical switch is arranged to:

receive data packets at the fiber-optic input;

assign a received data packet, having an associated destination, to one of the queues;

determine the number of vacant output wavelengths for the destination; and

schedule the data packet from the queue only when at least a minimum number, greater than one, of output wavelengths for the destination are vacant.

23. (new) The optical switch of claim 22, wherein each of the plurality of queues is associated with a respective range of data-packet lengths and is further associated with a respective minimum number of output wavelengths, and wherein the optical switch is further arranged to:

assign the received data packet to one of the queues according to the length of the data packet; and

schedule the data packet from the queue only when at least the associated minimum number of output wavelengths for the destination are vacant, wherein the minimum number of output wavelengths is smaller for a queue associated with relatively-short data packets than it is for a queue associated with relatively-long data packets.

24. (new) The optical switch of claim 23, wherein the buffer unit comprises at least first, second and third queues associated with respective first, second and third ranges of data-packet lengths of increasing size, and further associated with first, second and third respective minimum numbers of output wavelengths of increasing size.

25. (new) The optical switch of claim 22, further arranged to buffer only a fraction of the data packets passing through the optical switch.

26. (new) The optical switch of claim 22, comprising a plurality of fiber-optic inputs and at least one fiber-optic output which operates at a higher bit-rate than the plurality of fiber-optic inputs.

27. (new) The optical switch of claim 22, further adapted to operate within a network selected from the group consisting of: an optical packet switched network; an optical burst switched network; an electronic packet switched network; an electronic burst switched network; and a wavelength-division-multiplexed network.

28. (new) The optical switch of claim 22, wherein the buffer unit comprises an electronic buffer and is configured to buffer data packets electronically.

29. (new) The optical switch of claim 22, configured to receive wavelength-division-multiplexed signals at the fibre-optic input.

30. (new) The optical switch of claim 22, configured to send wavelength-division-multiplexed signals from the fibre-optic output.

31. (new) A method of switching data in an asynchronous, wavelength-division-multiplexing, fiber-optic communication network, comprising:

receiving data packets at a fiber-optic input of an optical switch;

assigning a received data packet, having an associated destination, to one of a plurality of queues in a buffer unit;

determining the number of vacant output wavelengths from the optical switch for the destination; and

scheduling the data packet from the queue only when at least a minimum number, greater than one, of output wavelengths for the destination are vacant.

32. (new) The method of claim 31, wherein each of the plurality of queues is associated with a respective range of data-packet lengths and is further associated with a respective minimum number of output wavelengths, the method further comprising:

assigning the received data packet to one of the queues according to the length of the data packet; and

scheduling the data packet from the queue only when at least the associated minimum number of output wavelengths for the destination are vacant, wherein the minimum number of output wavelengths is smaller for a queue associated with relatively-short data packets than it is for a queue associated with relatively-long data packets.

33. (new) The method of claim 32, comprising:

assigning received data packets to at least first, second and third queues associated with respective first, second and third ranges of data-packet lengths of increasing size; and

scheduling the data packets from the first, second and third queues only when at least first, second and third respective minimum numbers of output wavelengths for the destinations of the data packets are vacant, wherein the first, second and third minimum numbers are of increasing size.

34. (new) The method of claim 31, further comprising buffering only a fraction of the data packets passing through the optical switch.

35. (new) The method of claim 31, further comprising receiving data packets at a plurality of fiber-optic inputs at a receive bit-rate and sending a data packet from a fiber-optic output at a send bit-rate which is higher than the receive bit-rate.

36. (new) The method of claim 31, wherein the network is a network selected from the group consisting of: an optical packet switched network; an optical burst switched network; an electronic packet switched network; an electronic burst switched network; and a wavelength-division-multiplexed network.

37. (new) The method of claim 31, wherein the buffer unit comprises an electronic buffer, the method further comprising buffering data packets electronically in the buffer unit.

38. (new) The method of claim 31, further comprising receiving wavelength-division-multiplexed signals at the fibre-optic input.

39. (new) The method of claim 31, further comprising sending wavelength-division-multiplexed signals from the fibre-optic output.